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*"Dietetics in Health and Disease"*

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# Dietetics

## in Health and Disease.

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We cannot over-estimate the importance of diet in the treatment of disease. Not only however is it of importance when disease actually exists, but as a means of preventing the numerous ailments arising from mal-nutrition or insufficiency of food, it is a subject deserving our most careful consideration and closest study.

The medical practitioner of the present day is often confronted by the question, submitted to him by an anxious patient or his friends, as to what he (the patient) may have to eat, but too often the want of knowledge in this important branch of the healing art, is veiled by a grave and serious expression of countenance, while adopting a tone of voice and an impressive manner, calculated to make his hearers believe that he has given that particular point his most especial study, he pronounces his favourite dictum, "Oh you may take milk and milk foods, beef tea and such like, but don't by any means touch pork, cheese or new bread". Having expressed himself thus far he has reached the limit of his knowledge of this great factor in the cure of disease, and he studiously avoids such rashness as to commit himself further.

Yet ignorance in this matter is not altogether the fault of the profession, the General public has such profound belief in the efficacy of drugs alone, and an equal contempt for such - to them - minor considerations as the proper quantity and quality of food to be taken, that the medical adviser is too apt to ignore these points and to

Confine

Confine his attention to the study of therapeutics in its narrow sense as relating to drugs only.

Diet in Health. Let us first consider a few general rules which may be regarded as applicable to all cases.

It is impossible to appoint a fixed quantity and kind of food for each individual as so much depends on the habits, powers of digestion and other circumstances peculiar to the individual, that each case must be considered by itself.

Indeed the trite saying that "one man's meat is another man's poison", is one containing much more truth in its literal sense than is usually ascribed to it, and this fact is perhaps the basis on which is founded all the difficulties which face the medical man in prescribing or advising careful selection of certain foods and abstinence from others. And consequently we find, that in adults a judicious selection of the different kinds of the more nutritious foods which are found to agree with the individual, regularity in taking these and avoidance of overeating constitute practically what is required for a healthy diet. If these three great principles could be forced into the minds of the people, there would be considerably fewer cases of chronic dyspepsia, and affections arising therefrom, and 'suffering humanity' would be spared much discomfort.

For a healthy man, three full meals a day ought to be sufficient, and enough food

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food should be Taken at one meal to satisfy the requirements of the organism till the next one comes on. But here comes in the very danger which if we are to avoid being martyrs to dyspepsia and similar ailments we must beware of, and that is the Tendency to overeating. It is a good plan to rise from the Table with the feeling that one could eat a little more, the beneficial results arising from such a proceeding being in two directions, namely, as a preventive of over indulgence and in cases where the attractions of the Table are particularly great, a wholesome exhibition of self-denial.

On the other hand, the habit indulged in by many of taking small snatches of food between meals is a most injurious one. The almost continuous flow of saliva thereby induced neutralizes the gastric juice, and renders it unfit to digest properly the food taken.

Time for meals - With regard to the most suitable time for taking the ordinary meals of the day, it may be said that the heaviest meal - dinner - is best taken after the labours of the day are done, when that rest of the mind and body which is essential to easy digestion can be best secured. "Violent muscular exercise retards digestion". But we find too that absolute inactivity such as is obtained by sleep, also interferes with digestion, and on this account it is advisable that the last meal of the day be taken at such a time that it is partially absorbed before retiring to rest. But conversely it is found that going to bed hungry is apt to produce restlessness, and I have found persons

persons who, having retired for the night with an empty stomach, found it absolutely impossible to obtain sleep until the craving had been supplied by taking a few light biscuits or some such food.

Breakfast should be taken before any of the serious business of the day is done, and the appetite for this repast may in many cases be regarded as a fair indication of the state of health of the individual.

### Preparation of Food.

As regards food substances generally, we find that the majority of them must undergo some alteration in their condition and constitution as is supplied by cooking before they are acceptable as articles of diet, not only because when so prepared they are more pleasing to the palate, but because in that state they are taken to the greatest nutritive advantage. On the other hand however many of the common articles of food are taken raw. Nearly all fruits for example are eaten in an uncooked state, but this is due to the fact that sugar upon which their nutritive value largely depends is not changed by cooking. According to Dr. Roberts of Manchester the same may be said of milk.

This great authority on the subject states that boiled milk is not more readily peptonized than milk in its natural state.

On this point there is some diversity of opinion, and I have found at least that boiled milk is in many cases more readily retained by a weak stomach than milk which has not been so treated.

With regard to albuminous substances  
such

such as eggs, the effect of cooking is to render them much more digestible and the same may be said of proteid substances generally. The beneficial effect of cooking is however most marked upon starchy substances, the minute granules of which swell up by the imbibition of water, burst the cellulose covering which forms the walls of the cells (and which is itself of very little use in alimentation), and form a mucilaginous mass such as is seen around a well-cooked potato, and which is digested with great readiness. This layer of cellulose surrounding each starch granule is very indigestible, and consequently but for the art of cooking, starchy food would be of little use to us.

The effect of cooking therefore upon the majority of our food substances is to relieve our digestive organs of a considerable amount of the work thrown upon them, and such preparatory measures may in fact be regarded, as the preliminary and by no means least important stage of the digestive process. If in health we recognise not only the necessity but the beneficial results of cooking, or in other words of partially digesting the food taken, how much greater must the necessity be when as a result of disease the powers of digestion are greatly minimised, and consequently of recent years rapid strides have been made in the further digesting of foods to meet the requirements of the invalid. As a result of the great attention which has been given to this subject by manufacturers, we have the numerous peptonized preparations which are found to be so valuable in many cases of weak digestion, and many articles of diet

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diet are rendered acceptable to the invalid when as ordinarily prepared they would not be tolerated.

Stimulants. To healthy persons these are as a rule not only unnecessary but to many they are absolutely injurious. When taken with food, alcohol may no doubt in some cases aid digestion by stimulating the gastric juice, but the constant use of such stimulus weakens digestion and ultimately seriously impairs the appetite producing nausea and loathing of food. Its primary action is however a local excitant of the digestive mucous membrane.

Alcohol in the form of whiskey not taken by old people just before retiring for the night, acts as a sedative and soporific, inducing sleep and thereby enabling the body and mind to obtain the much required and in such persons too often denied rest.

Find that Chambers in his "Diet in Health and Disease" gives the following rules for the use of alcohol by healthy persons;

(A) "Let it be taken never as a stimulant or preparation for work, but as a defence against the injury done by work, whether of the mind or body. For example it is best taken with the evening meal or after toil."

(B) "Let the increase in the desire for and power of digesting food be the guide and limit to the consumption of all alcoholic liquids."

(C) "Let the forms be such as contain the least proportion of fusel oil."

(D) "Let all with an hereditary tendency to hysteria or other functional disease of the nervous system refrain"



refrain from its use altogether even though as yet they are in good health.

Among the hereditary tendencies must be classed a proclivity to delight in drunkenness, which remarkably runs in families.

### Diet in Sickness.

Under this heading I propose to consider some of those affections in which the dieting of a patient is of more than usual importance.

### Atonic Dyspepsia -

Probably the most common affection for which one is consulted in general practice is atonic dyspepsia or chronic deficiency of power of the stomach. This condition is one in which the feeling is of discomfort rather than pain and it is this feeling of uneasiness which the patient finds so difficult to understand. The existence of weak digestion is evidenced by a feeling of uneasy distension in front of the waist coming on some time after food, and arising from the want of tone in the stomach and bowels, which admits of air being retained. The feeling as described by most patients is that their clothes seem too tight for them. If the flatulence which is the cause of this feeling be great then more serious symptoms result, as palpitation of the heart and intermission of the pulse.

This atonic condition is not confined to the stomach but exists also in the intestines, as a result of which we have constipation arising. Slight purgatives may temporarily relieve this, but the frequent administration of purgative medicine, only increases the atonic state and hence we must  
look

look to regulation of the diet for a more permanent benefit. At this point let me protest against the pernicious practice indulged in by so many of the working classes, namely that of taking tea at all times, and substituting it for the more substantial mid-day repast.

This probably before all others is the Cause of indigestion amongst that class. Were they to exclude tea entirely from their dietary, and substitute milk or cocoa they would find themselves none the losers but very much the gainers by the transaction. Tea, coffee and beer all tend to increase the condition of constipation and should therefore be avoided.

A glass of water taken the first thing in the morning often assists in overcoming this costive tendency. Green vegetables should be freely eaten and also summer fruits. Potridge should be taken for breakfast and brown bread is preferable to ordinary white bread. Bacon which is regarded as "the most sedative of all fats to the digestive canal" may be taken as a preventative of that hardening and drying of the bowels which causes much of the inconvenience. It is better to allow continuance of constipation than to administer purgatives, and it is wise to disabuse the mind of the patient of the fallacy that the bowels not open every twenty four hours is a mischief\*. Let the patient trust rather to ~~drugs~~ diet than to drugs.

Another habit indulged in by many people and one which is also an important cause of weak digestion is that of drinking large quantities of fluids at meals. Fluids should be taken in moderation.

moderation as when present in large quantity in the stomach they dilute and weaken the gastric juice which at the beginning of the meal is scanty, but owing to the presence of food in the stomach becomes more plentiful later on at which time fluids aid digestion by hastening the progress of the chyme through the pylorus and so preventing the delay to which the feeling of uneasiness is largely due.

Another common symptom of indigestion is regurgitation of portions of food having an acid taste, in short 'acidity'. To obviate this, pastries, rich greasy sauces &c should be avoided, as these coming into contact with the remnants of former meals which have undergone an acid fermentation tend to become rancid. Raw fruit should never be taken at the end of a meal. Roast apples and stewed prunes are quite digestible, but in eating them sugar must not be added as is commonly done, especially to the former. The latter are of particular value when there is a costive tendency. Semolina, corn flour, Tapioca and arrowroot may be taken without fear of hurt. All bread should be stale or toasted. The habit of eating cheese after dinner indulged in by many "to aid digestion" is a wrong one. It invariably produces the reverse effect to that for which it is taken. The lighter fish, such as whiting, sole, haddock, plaice, perch &c, may be taken with freedom, but rich and oily fish such as eels, herrings, salmon &c, should be avoided.

Enteric Fever. In this disease over which we have little direct control by medicinal agents we

we must depend chiefly on the diet if we hope to guide the patient successfully through an illness which even in its less severe forms is most protracted, and exhausting to the system. The condition of the alimentary tract, (which Fothergill graphically describes in these words "----- There is also a brown chapped tongue, well retracted, the brown fur consisting of an accumulation of dead epithelial scales, significant of the whole intestinal canal, with brown borders on the teeth of similar origin, accompanied by the formation of crusts on the lips") renders it necessary that the diet should be of the lightest possible kind, while the exhausting nature of the disease necessitates that the food given should be of considerable nutritive value. These two conditions are best supplied by a milk diet. In all cases during the fever, solid food should be avoided and the patient should be sustained by liquids alone. When there is diarrhoea present with three or four motions per day the diet should be one of milk exclusively.

Beef Tea, chicken soup and other light soups are as a rule eligible, but they are all contra-indicated when diarrhoea is present. Pure milk however is sometimes found, after having been given for some time to disagree with the stomach, and is apt to produce at least nausea and it may be, retching and sickness. This is best avoided by diluting the milk with lime water or soda water, which prevents the milk from curdling, and exercises also a beneficial influence

influence in tending to overcome the diarrhoea.

Should slight constipation be present in place of diarrhoea then leaf tea and chicken soup are indicated.

The great characteristic of this disease is the tendency to relapse and the cause of the relapse is usually some error of diet. The difficulty of getting friends and untrained nurses to thoroughly understand the great necessity for care in the giving (or rather withholding) of food in this disease is an experience of all medical men, and this difficulty is more especially to be found when, the crisis having been reached, the patient is getting better and his appetite returns. It is at this very point that most care is essential.

Some time ago an example of this came under my notice.

A young man had been carefully guided through the serious stages of this disease, so that for a few days his temperature remained normal.

His craving for food had returned, and in an evil moment his mother had been persuaded to give him a piece of ordinary bread and butter. The result was that next day the temperature was found to have rushed up to  $103^{\circ} F$  - in other words, a relapse had taken place.

Through this he was successfully guided and the temperature again stood at normal. His diet throughout had consisted solely of milk with a little soda water added, but at this point a friend of the patient took him a few grapes. The pulp of these he swallowed but rejected the skins. A second relapse was the result, and had not the patient been, previous to the primary attack a strong healthy man, the consequences of this very questionable act of friendship might have been more serious.

As it happened the patient made a good recovery.

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It is a good rule if we desire the crisis to be a true one, when once a complete crisis has been obtained, the temperature of  $99^{\circ} F$ , at least being continued throughout the twenty four hours, to allow at least a week or ten days to pass with a temperature below  $100^{\circ} F$ , before solid food is given. It is well thereafter to begin with farinaceous food, as corn flour etc. In about another week or so light white fish such as sole or whiting might be given, then a little chicken and so on until the patient can with safety return to his ordinary diet.

It has been suggested by some that as in this disease the alimentary tract is in a dry parched condition, and (taking the mouth and tongue as our guidance to the condition of the rest of the canal) all the secretions held in abeyance, the nutritious elements of the milk do not get a proper chance. In order to overcome this and to soften the dry epithelial scales of the mouth, tongue and probably of the whole alimentary tract, glycerine is recommended. The tongue and lips are smeared with this, and a teaspoonful given to be swallowed several times a day.

With regard to the action of this on the digestive tract, I cannot at present speak, but I have found it of considerable use when applied to the tongue and lips, in relieving the feeling of thirst and the discomfort arising from the dry, parched condition of the mouth.

### Diabetes Mellitus.

This is another affection in which judicious dieting forms a most important

important element in the treatment.

In this disease all forms of starch and saccharine food should be withdrawn and the patient put on a diet consisting principally of nitrogenous and fatty forms of food. Hence even ordinary bread which contains a large amount of starch matter must be avoided and for this may be substituted gluten bread, bran bread and biscuits made of these. Pure gluten bread is said to be about three times as nourishing as meat, and bread prepared with forty per cent of gluten is said to contain more albumen than chicken.

Bread however when toasted is found to contain less starch matter than when not.

Potatoes in which the amount of starch material is also great must be avoided, and so must most forms of vegetable food, with the exception perhaps of watercress, celery and lettuce, and such like green vegetables. Peas, beans, turnips, carrots, parsnips and vegetables of that class must not be taken.

Cream, butter, cheese the constituents of which are largely fatty may be taken but pastry and puddings of all kinds when these are made with sugar must be avoided. All forms of butcher meat, fish, game etc may be partaken freely of, and the same may be said of regarding eggs and soups of all kinds, not containing vegetables.

Dr. Ris of Kloten in a recent number of the British Medical Journal (Aug. 1888) has recommended pea soup as an excellent substitute for invalids, convalescents and more especially for patients suffering from cancer of the stomach and this disease which we are now considering.

His suggestions, as to the mode of preparation of this soup are as follows; "Take peas, water, and sufficient

sufficient amount of soup vegetables; add one half per cent of carbonate of soda: and boil the whole until the peas are completely disintegrated: then let the soup stand until sedimentation is complete, and decant the fairly clear thin fluid above the deposit. This product is stated to resemble a good meat soup in its taste, to be at least equally digestible; and at the same time to surpass the very best meat soup in nutritive value." The latter statement is no doubt due to the considerable proportion of legumen found in the peas, which is a vegetable albumen considered equal to the albumen of egg in its nutritiousness. I have not tried this form of diet in diabetes, but in one case of cancer of the stomach and another of ulcer of that organ I recommended it with very pleasing results.

The skim-milk treatment of diabetes advocated by Dr. Doukin has not received very strong support. It is perhaps most applicable to those cases of glycosuria which are the result of over feeding, but it hardly commends itself to ordinary cases of diabetes, which is essentially a disease giving rise to profound exhaustion.

With regard to stimulants it may be said that in the treatment of the far advanced stages of diabetes, stimulants are not only necessary but of great benefit. In such cases brandy and spirits which have not been sweetened are best; indeed all sweet wines must be avoided.

For the great thirst which is a striking symptom of this disease acidulated drinks are  
best



best suited.

## Rheumatism and Gout.

In these and allied affections attention to diet is equally important in the interval between attacks as when an attack is actually present. It is in fact, in the latter affection, to diet that we must look for a prophylactic. In almost all cases the living should be plain. All rich articles of diet should be avoided, indulgence in heavy animal food being decidedly injurious. It is therefore advisable to avoid beef and mutton, a vegetable diet with a limited amount of fruit being probably most suitable in the ordinary chronic forms of rheumatism. Chicken, pigeon and such like lighter forms of animal food may however be partaken of, and fresh milk and eggs are nourishing without being injurious. Diluents such as lemon-juice, lemonade, soda water, milk etc, should be freely partaken of, but particularly in Gouty subjects, the amount of alcoholic stimulants which the patient may be in the habit of taking should be judiciously curtailed, or even, if the appetite and digestion are not impaired thereby, should be withdrawn altogether. Beer should as a rule be ~~shunned~~ by such patients the safest form of stimulant in such cases being probably spirit and water, and of wines, claret is perhaps the most suitable, and even light dry cherry in some cases is not injurious.

In justice to tradition - as no man who writes or speaks about Gout but tells the story - I

insert

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Insert the Tale of the noble Earl who was recommended by the vendor to try his sherry which he advertised as being free from all properties which tend to induce gout, and who in the usual testimonial solicited by the vendor remarked that 'he had tasted the wine but preferred the gout'.

The recommendation given to gouty subjects to "live upon sixpence a day and earn it", puts the prophylactic treatment of gout in a nutshell, the latter part of the advice embodying the necessity for plenty of exercise, which is especially important when the patient is comparatively young and otherwise healthy.

### Rickets.

This affection is so essentially a disease of childhood that in discussing it fully it would be almost necessary to enter into the study of the management and feeding in infancy and childhood. But it is likewise so essentially a disease in which a right and judicious dieting has such a marked influence, that I feel I am justified in making a few remarks regarding it.

The emaciation and general debility which characterize this affection point to defective digestion and assimilation as taking some part in its causation. This is less often brought about by an inadequate supply of food being given to the child than by the giving of food which is unsuited to the delicate digestive organs.

But foul impure air, damp and filthy dwellings

147.

Dwellings also aid in the establishment of this disease, and hence we find that it is a disease which is principally found amongst the children of the lower classes.

In the prophylactic treatment we must consider the causes, and as regards the dietary to which in this paper I must confine myself, it may be remarked, that besides being sufficient in quantity, the food must be suitable to the age and circumstances of the child. In infancy the only perfect food is unquestionably that which is provided by nature, the milk of the mother. In too many cases however this entirely fails, under which circumstances we must have recourse to the next most suitable substitute. The nearest approach to mother's milk is to be found in the milk of the ass, which is considerably richer in sugar but more nearly approaches mother's milk in the amount of Casein present than any other. The milk of the cow is that which is generally used however, on account of its being more easily obtained, but it contains much more casein and much less sugar than human milk, and on this account it is necessary to dilute and sweeten it, because the casein in excess renders the milk less digestible. For the purposes of dilution ordinary water may be used, but should the milk present any tendency to become acid on the stomach, then lime water should be added, which latter method of dilution is especially beneficial in the disease which we are now considering.

At

At a later age the food should be such ~~that~~ as has a fair proportion of fatty and proteid matters. Meat well cooked should be given, and generally a good nourishing diet with plenty of milk is necessary. Cream or milk containing the cream is very valuable.

It is much to be regretted that a form of diet once so common among all classes of society in Scotland is now unhappily fast becoming less generally used than formerly, especially among the lower classes the very section of the community whose hygienic surroundings necessitate the consumption of some such food. I refer to oat meal porridge and milk, without which at one time almost no breakfast table in Scotland was complete, and upon which were reared those "hardy sons of rustic toil", through whose instrumentality largely, British battles have been rendered pleasant reading to British subjects, and who pre-eminently distinguished themselves in those hard-fought conflicts of Inverman and Alma.

As a preventative of rickets no form of food is better adapted, the deficiency of fats which is an undoubted cause of rickets being supplied by the milk and meal.

In a table in which were tabulated (James Thompson, Glasgow) the foods most generally consumed in those Glasgow districts where ricketty children meet the eye at every turn it was found "that rickets were in direct relation to the consumption of

or abstinence from, oat meal porridge and milk as a diet". In place of this more nourishing fare, we find substituted tea or coffee with bread and butter or even, since of late years sugar has become so cheap, jelly or jam. Such a statement as that which I have above quoted, almost makes us endorse the sentiment expressed by Scotland's own poet, "regarding the class to which I have just referred; May Heaven their simple lives prevent From luxury's contagion, weak and vile".

### Ulceration of the Stomach.

Our aim in the treatment of this affection should be the careful selection of a diet, which while possessing high nutritive qualities should at the same time be such as will cause no undue irritation of the stomach. As in intense fever, there is no article of diet which seems to suit this purpose better than milk, but it is of importance that it be given in very small quantities and at short intervals, the movement of the stomach and the constant pouring out of gastric juice consequent to the digestion of heavy food rendering the ulcers slow to heal. Heavy animal food should by no means be indulged in, in fact the patient will very soon learn not to attempt such a form of diet. In addition to milk, corn flour, arrowroot or biscuit powder may be used. The lighter soups, given rather cold, and white fish are often valuable.

Here again may be tried with advantage the alkaline

alkaline pea soup spoken of in the treatment of Diabetes. Ellis made either from calves feet or from gelatine whose nutritious qualities have lately been highly lauded, may be found useful in many cases. In others pounded raw beef with some flavouring agent added is beneficially employed, while the beef-peptonoids as prepared by Carnrick are of very great value in most cases.

All liquids should be given cool or cold, hot substances being highly injurious, and on this account hot tea and coffee must be avoided.

The practice indulged in, in fashionable circles of taking ice after a dance, is one which is highly favourable to the production of ulceration of the stomach.

All forms of sweets and pastries should be eschewed, not only during an attack of ulceration, but, in those who ~~are~~ have once suffered, for a very long time after.

### Phtisis

This most common as well as most fatal of all chest affections, is one which is accompanied, as its name implies (Gr.  $\phi\theta\iota\sigma$  to waste away) by a general wasting away, and is hence one in which the diet requires to be particularly attended to. It should be for the most part one which, while plain, is at the same time wholesome and nourishing, and easily digested. Meals should be taken at regular intervals and attention should be directed to the most careful regulation.

regulation of the digestive organs.

Plenty of out door exercise should be taken when the weather is suitable.

All heavy articles of food must be avoided, but it is not wise to curtail the dietary of a phthisical patient too much, a fairly wide range being generally necessary.

Animal foods when these can be digested may be taken, and of these, beef and mutton are the most nutritious, and when well cooked - particularly roasted - may be considered as easily digested as any other.

Old meat is preferable to young in both respects - beef to veal, mutton to lamb. - Steak and chop, with roast beef and mutton form good varieties.

White flesh (fowls and game) is an excellent substitute for 'butcher meat'; so also is white fish.

Good milk and plenty of fresh eggs are very valuable for such patients, and can be taken with great freedom. But of all substances, none is of so much value as one which has for a long time stood on debatable ground, as to whether it ought to be considered a food or a drug, namely Cod liver oil. As it is undoubted that it undergoes digestion - for even when large quantities of it are taken for a lengthened period of time there is found little, if any, increase in the oily ingredients of the evacuations - I choose to consider it as a 'food', which it unquestionably is, in the sense that it 'sustains, nourishes and augments'. It should be taken in small quantities - a teaspoonful after meals - to begin with, and the amount gradually increased

up

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up to even an ounce, three times a day.

When taken regularly we see its beneficial influence extended to every function of the body; digestion, appetite, strength, all undergo improvement and testify to its value.

There are patients however who seem to be quite unable to take codliver oil, and in these cases we find substitutes, but somewhat inadequate ones in cream, fats, various other oils and Glycerine. This last has been much used as a substitute for codliver oil, and though in many instances acting most favourably, it nevertheless like other substitutes hitherto employed, falls far short of the original.

I have in this paper endeavoured to discuss only some of ~~these~~ what may be regarded as the more important affections in which the diet forms an active part of the treatment, and though I do not choose to cast in my lot with those physicians who pride themselves in proclaiming that they have no belief in drugs, yet in many cases could strict dietetic principles be thoroughly carried out I venture to say that we might safely exclaim with Macbeth;

"Throw physic to the dogs - I'll none of it."

James Young